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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,614	03/06/2002	Yoshio Aoki	020132	4964

23850 7590 10/04/2002

ARMSTRONG, WESTERMAN & HATTORI, LLP
1725 K STREET, NW.
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

ERDEM, FAZLI

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,614

Applicant(s)

AOKI ET AL.

Examiner

Fazli Erdem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-18 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 10,11,19, and 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

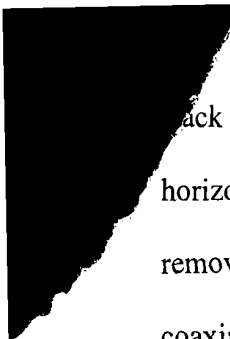
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Konno (5,834,486) in view of Hoffmeister (5,668,509).

Regarding Claims 1 and 2 Konno discloses an integrated circuit device having signal wiring structure of ultrahigh-speed performance where the integrated circuit device has a substrate, a plurality of circuit elements arranged on the substrate and having terminals, a plurality of signal lines connected between the terminals of the circuit elements or between the terminals and external connection terminals and a ground line provided close to the signal lines to determine a transmission characteristic of the signal lines, ground line including a high-potential power source line and a low-potential power source line, the high potential power source line and low-potential power source line being vertically separated by a dielectric layer. Konno does not specifically disclose the shield plate structure. However, Hoffmeister et al. disclose a modified coaxial to grounded coplanar waveguide vertical solderless interconnects for

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back MIC assemblies where solderless interconnect provides a transition from a GCPW in a horizontal plane to a vertical plane. The modified coaxial line has a portion of the outer shield removed from the front, and is placed vertically on the center conductor of a GCPW. The coaxial shield connects both ground planes of the GCPW.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include shield structure in Konno as taught by Hoffmeister in order to provide a better ground protection for the semiconductor device.

3. Claims 2-5 rejected under 35 U.S.C. 103(a) as being unpatentable over Konno (5,834,486) in view of Hoffmeister (5,668,509) further in view of Rahim (6,362,525).

Regarding Claims 2-5, in combination Konno and Hoffmeister disclose all the claimed subject matter except the bonding structure. However, Rahim discloses a circuit structure including a passive element formed within a grid array substrate and method for making the same where the bonding structure is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the bonding structure in Konno and Hoffmeister combination as taught by Rahim in order to provide a more reliable semiconductor device.

4. Claims 6-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Konno (5,834,486) in view of Hoffmeister (5,668,509) further in view of Rahim (6,362,525) further in view of McClanahan et al. (5,396,397).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (703) 305-3868. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

FE
September 27, 2002

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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Regarding Claims 6-9, Konno, Hoffmeister, and Rahim combination disclose all the claimed subject matter except they specifically fail to disclose the viahole structure. However, McClanahan et al. show a field control and stability enhancement in multi-layer, three-dimensional structures where the unitized multilayer circuit structures including basic substrate insulating layers and dielectric field control layers further including the viahole structure is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the viahole structure in Konno, Hoffmeister, and Rahim combination as taught by McClanahan et al. in order to provide a better interconnection.

5. Claims 12-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Konno (5,834,486) in view of Hoffmeister (5,668,509) further in view of Rahim (6,362,525) further in view of McClanahan et al. (5,396,397) further in view of Ishikawa et al. (6,411,181).

Regarding Claims 12-18, in combination Konno, Hoffmeister, Rahim and McClanahan et al. disclose all the claimed subject matter except they specifically fail to disclose the antenna structure. However, Ishikawa et al. disclose a dielectric resonator, inductor, capacitor, dielectric filter, oscillator, and communication device where the antenna structure is disclose.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the antenna structure in Konno, Hoffmeister, Rahim, and McClanahan et al. combination as taught by Ishikawa et al. in order to provide a semiconductor device that can be used for communication purposes.

Conclusion